CLAIMS

1. A wind-driven power-plant comprising a rotor (100) having at least one blade (101) and connected directly or indirectly to a generator (110) generating electric power, further comprising an electrical assembly (200) made up of different sub-assemblies (210, 220, 230, 400) containing basic electronic, electrical and/or electromechanical and/or sensor elements/components and/or electrotechnical safety elements,

characterized in that

all elements/components or specific elements/components of an electric sub-assembly (210, 220, 230, 400) are combined according to their purposes into one or more function modules (250, 250', 410) that implement a function relating to electric power generation, at least one parallel module (270, 410') being associated with at least one function module (250, 250', 410) and in normal operation of said power-plant implementing as needed an identical or similar function as the function module (250, 250', 410). where the function module (250, 250', 410) and the parallel module (270, 410') are connected or connectable to each other in a manner that, in the event of operational malfunction during which one function module (250, 250', 410) or a parallel module (270, 410') fails, the remaining operative function module or parallel module (250, 250' 270, 410, 410') at least partly maintains power generation.

2. Wind-driven power-plant as claimed in claim 1, characterized in that the parallel module is designed in a way that it fully assumes the function of the function module (250, 250', 410) when latter fails.

3. Wind-driven power-plant as claimed in claim 1, characterized in that it comprises at least two function modules (250, 250', 410) implementing identical or similar functions and furthermore at least one parallel module (270, 410') that preferably completely assumes the function of a function module (250, 250') when latter fails.

4. Wind-driven power-plant as claimed in one of the above claims, characterized in that an electric sub-assembly comprises at least one control device to optimize electric power generation, the control device (400) including at least one operations managing computer (MC, MC').

5. Wind-driven power-plant as claimed in the preceding claim, characterized in that the electrical power feeding the control device (400) is obtained from at least one power source module (V, V').

6. Wind-driven power-plant as claimed by the preceding claim, characterized in that at least one power source module (V, V') is designed to be independent of the public electric network.

7. Wind-driven power-plant as claimed in one of the above claims, characterized in that the electric assembly includes at least one more control device, the first control device being designed as a function module and the second control device as a parallel module.

8. Wind-driven power-plant as claimed in claim 1, characterized in that at least one of the basic electronic, electrical and/or electromechanical elements/components is associated with a replacement element, where the basic and the replacement elements are connected to each other in a manner that in the event of a basic element failure, its task shall be assumed by the replacement element/component..

9. .Wind-driven power-plant as claimed in one of the above claims, characterized in that maintenance of the wind-driven power-plant may be implemented at a distance from a remote monitoring system.

10. Wind-driven power-plant as claimed in the preceding claim, characterized in that the remote monitoring system is designed to access the control device (210)

11. Wind-driven power-plant as claimed in the preceding claim, characterized in that the remote monitoring system is designed in way that failure of a function module (250, 250') may be diagnosed by means of the remote monitoring system.

12. Wind power plant as claimed in the above claim, characterized the remote monitoring system is designed in a way that defect remediation can be implemented by means of the remote monitoring system.

13. Wind-driven power-plant as claimed in one of the above claims, characterized in that parameters of ambience and power-plant are fed to the control device (210) which by means of said parameters operationally manages said power-plant, permissible ranges of said ambience and power-plant parameters being defined by design parameters.

14. Wind-driven power-plant as claimed in claim 13, characterized in that the design parameters are standard design parameters stored in the operations managing computer in normal operation.

15. Wind-driven power-plant as claimed in claim 13, characterized in that in the event of operational malfunction, the operations managing computer accesses temporary design parameters that are stored in the operations managing computer and/or are generated therein and/or or are fed to it, where those temporary range limits matching operational management relating to permissible ambience and to power-plant parameters are defined which allow maintaining at least for some time generation of electrical power.

16. Wind-driven power-plant as claimed in one of the above claims, characterized in that the temporary range limits can be fed directly from the remote monitoring system into the operations managing computer.

17. Wind-driven power-plant as claimed in either of claims 15 and 16, characterized in that the temporary range limits may be directly fed from the remote monitoring system into the operations managing computer.

18. Wind-driven power-plant as claimed in one of the above claims, characterized in that at least two circuit elements/components/function modules and/or parallel modules (250, 250', 270)/electrical sub-assemblies (210, 220, 230) are connected to each other by separable hookup means.

19. Wind-driven power-plant as claimed one of the above claims, characterized in that at least two circuit elements/components/function modules and/or parallel modules (250. 250', 270)/electrical sub-assemblies (210, 220, 230) are connected to each other by a bus system which comprises bus users, at least one transmission medium and software.

20. Wind-driven power-plant as claimed in the preceding claim, characterized in that the bus system is annular or a network structure.

21. Wind-driven power-plant as claimed in either of claims 19 and 20, characterized in that at least one bus user comprises a microprocessor which is programmable in a way that besides other features it also can monitor the proper operation of at least one circuit element/component, of a function module or parallel module (250, 250', 270) or of an electrical sub-assembly (210, 220, 230) and that in the event of malfunction of a circuit element/component, of a function module or parallel module (250, 250', 270) or of an electrical assembly unit (210, 220, 230) it can switch over to a replacement circuit

element/component or to an operative function module or parallel module (250, 250', 270) or to an electrical assembly unit (210, 220, 230).

22. Wind-driven power-plant as claimed in claim 1, characterized in that at least one rotor blade (101) is angularly adjustable,

23. Wind-driven power-plant as claimed in claim 22, characterized in that the electrical sub-assemblies (210, 220, 230) furthermore include a rotor adjustment unit to regulate the angular setting of the minimum of one rotor blade (101).

24. Wind-driven power-plant as claimed in one of the above claims, characterized in that the hookup element/component between the generator (110) and the electrical network (125) is designed in a manner that the generator can be operated at least at two different rotational speeds, preferably within a variable rotational speed range, at the electrical network (125).

25. Wind-driven power-plant as claimed in claim 1, characterized in that the hookup element/component between the generator and the electrical network is a converter sub-assembly (230) fitted with several active switches.

26. Wind-driven power-plant as claimed in the preceding claim, characterized in that the converter sub-assembly (230) is fitted with at least one conversion control which allows actuating the active switches.

27. Wind-driven power-plant as claimed in the preceding claim, characterized in that the conversion control is connected to the control device.

28. Wind-driven power-plant as claimed in the preceding claim, characterized in that at least one function module (250, 250') comprises at least a portion of at least the active switches of the converter sub-assembly (230).

29. Wind-driven power-plant as claimed in one of the above claims, characterized in that the generator (110) is an AC generator, in that the converter sub-assembly (230) comprises a rectifier (254) situated at the generator side and coupled to this generator (110) and changing the AC current at least in part into a DC current or into a DC voltage, in that the converter furthermore includes a DC current intermediate circuit or a DC voltage intermediate circuit (259) which connects the generator-side rectifier (254) to at least one network-side inverter (255) connected to the electric network (125), the network-side inverter (255) converting the DC current or DC voltage into electrical power matching the electric network (125).

30. Wind-driven power-plant as claimed in the preceding claim, characterized in that the generator-side rectifier is fitted with active switches.

31. Wind-driven power-plant as claimed in one of the above claims, characterized in that a function module (250, 250') comprises at least the generator-side rectifier (254), the DC current or voltage intermediate circuit (259) and the network-side inverter (255).

32. Wind-driven power-plant as claimed in either of claims 28 and 31, characterized in that the function module (250, 250') is associated with at least one parallel module (270), the function and parallel modules being directly or indirectly connected by separable hookup elements (261, 262, 261', 262', 271, 272) to the generator (110) and/or directly or indirectly to the electrical network (125).

33. Wind-driven power-plant as claimed in the preceding claim, characterized in that if a function or parallel module (250, 250', 270) should fail, said module shall be isolated in the electrical assembly by opening the separable hookup elements (261, 262, 261', 262', 271, 272)

34. Wind-driven power-plant as claimed in either of claims 32 and 33, characterized in that the separable hookup-elements (261, 262, 261', 262', 271, 272) include at least one switch.

35. Wind-driven power-plant as claimed in the preceding claim, characterized in that the switch is operated manually.

36. Wind-driven power-plant as claimed in one of the above claims, characterized in that the switch is remote-controlled.

37. Wind-driven power-plant as claimed in one of the above claims, characterized in that the switch is automatically operated by the control device (210) or by the remote monitoring system.

38. Wind-driven power-plant as claimed in one of the above claims, characterized in that at least one separable hookup (261, 262, 261', 262', 271, 272) comprises two series switch elements of which one is a power switch and the other a contactor.